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EXAMINER	
PAIK, STEVE S	

ART UNIT	PAPER NUMBER
2876	

DATE MAILED: 03/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/633,216	PATEL ET AL.	
	Examiner	Art Unit	
	Steven S. Paik	2876	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 January 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9,11-22 and 24-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9,11-22 and 24-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *herewith*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Receipt is acknowledged of the Amendment filed January 03, 2005. The applicant amended claims 1, 6, 12, 14, 19, 25, 27, and 30-34 and cancelled claims 10 and 23.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-9, 11-22, and 24-34 are rejected under 35 U.S.C. 102(b) as being anticipated by Bunte et al. (US 6,249,008, hereinafter Bunte).

Re claim 1, Bunte discloses an optical reader and a method for reading optical indicia (optical code) using the optical reader comprising the steps of:

consecutively imaging an optical code respectively using at least a first (first type of illuminator) and a second imaging (second type of illuminator) setting;

generating at least first and second sets of image data respectively corresponding to the first and second imaging settings (by an array of photosensors);

evaluating at least one of the first and second sets of image data (by a signal processor 19);

selecting at least one of the first and second sets of image data in accordance with the evaluation (Abstract); and

decoding image data (decode processing circuitry) from the selected set of image data that corresponds to the optical code (Fig. 18A-18C).

Re claim 2, Bunte discloses the method as recited in rejected claim 1 stated above, wherein the step of consecutively imaging includes the step of imaging using the second imaging setting immediately after imaging using the first imaging setting (Fig. 23 and col. 31, ll. 38-67).

Re claim 3, Bunte discloses the method as recited in rejected claim 1 stated above, further comprising the steps of:

evaluating a decodability quality of the first set of image data; and

configuring the second imaging setting according to the evaluation results (Fig. 23 and col. 31, ll. 38-67).

Re claim 4, Bunte discloses the method as recited in rejected claim 1 stated above, wherein the first and second imaging settings each include at least one of a focus point setting, an illumination level setting (col. 30, ll. 43-53), a signal gain setting, and an exposure setting.

Re claim 5, Bunte discloses the method as recited in rejected claim 1 stated above, wherein the evaluating step includes evaluating a decodability quality of at least one of the first and second sets of image data (Fig. 23 and col. 31, ll. 38-67).

Re claim 6, Bunte discloses the method as recited in rejected claim 1 stated above, wherein the evaluation step includes evaluating a portion of the first set of image data and a portion of a second set of image data that is complementary to the portion of the first set of image data (col. 2, ll. 8-18 and the attempt to accomplish a complete reading of an optical code is shown in block diagram of Fig. 23; col. 31, ll. 59-67).

Re claim 7, Bunte discloses the method as recited in rejected claim 1 stated above, wherein the first imaging setting includes a first focal point setting, and the second imaging setting includes a second focal point setting, wherein the first and second focal point settings are different (col. 24, ll. 9-14).

Re claim 8, Bunte discloses the method as recited in rejected claim 1 stated above, wherein the selecting step includes the steps of:

comparing evaluation results corresponding to the first and second sets of image data; and

selecting at least one of the first and second sets of image data in accordance with the comparison (Abstract).

Re claim 9, Bunte discloses the method as recited in rejected claim 1 stated above, wherein:

the evaluating step includes evaluating only one set of image data and determining if results of the evaluation satisfy a predetermined condition;

the selecting step includes selecting the evaluated set of image data if the results of the evaluation satisfy the predetermined condition, and further comprising the steps of:

evaluating the other set of image data if the results of the evaluation do not satisfy the predetermined condition and comparing the evaluation results corresponding to the first and second sets of image data; and

selecting at least one of the first and second sets of image data in accordance with the comparison (col. 31, ll. 39-67).

Re claim 11, Bunte discloses the method as recited in rejected claim 1 stated above, wherein the evaluating step includes the steps of:

locating image data in at least one of the respective first and second sets of image data that corresponds to at least a portion of the optical code; and

evaluating the respective located data (col. 31, ll. 39-67).

Re claim 12, Bunte discloses the method as recited in rejected claim 1 stated above, wherein a location of an optical code (label 30) in the image data in one of the first and second sets of image data is used to locate image data that corresponds to at least a portion of the optical code in the other set of image data (Block 2305 in Fig. 23 includes a step of selecting the ordered list of compatible sensor, illuminator and decode combinations generated previously based on preference calculations).

Re claim 13, Bunte discloses the method as recited in rejected claim 1 stated above, further comprising the step of receiving at least one of the first and second sets of image data while performing the evaluating step (co. 31, ll. 53-56).

Re claim 14, Bunte discloses a system for imaging an optical code comprising;

means for consecutively imaging an optical code respectively using at least a first (first type illuminator) and a second imaging (second type illuminator) setting;

means for generating at least first and second sets of image data respectively corresponding to the first and second imaging settings (Block 2305 in Fig. 23 includes a step of selecting the ordered list of compatible sensor, illuminator and decode combinations generated previously based on preference calculations);

means for evaluating at least one of the first and second sets of image data (by a signal processor);

means for selecting at least one of the first and second sets of image data in accordance with the evaluation (Abstract and col. 31, ll. 58-67) and;

means for decoding image data (decode processing circuitry) from the selected set of image data that corresponds to the optical code (Fig. 18A-18C).

Re claim 15, Bunte discloses the system as recited in rejected claim 14 stated above, wherein the step of consecutively imaging includes the step of imaging using the second imaging setting immediately after imaging using the first imaging setting (Fig. 23 and col. 31, ll. 38-67).

Re claim 16, Bunte discloses the system as recited in rejected claim 14 stated above, further comprising:

evaluating a decodability quality of the first set of image data; and

configuring the second imaging setting according to the evaluation results (Fig. 23 and col. 31, ll. 38-67).

Re claim 17, Bunte discloses the system as recited in rejected claim 14 stated above, wherein the first and second imaging settings each include at least one of a focus point setting, an illumination level setting (col. 30, ll. 43-53), a signal gain setting, and an exposure setting.

Re claim 18, Bunte discloses the system as recited in rejected claim 14 stated above, wherein the evaluating step includes evaluating a decodability quality of at least one of the first and second sets of image data (Fig. 23 and col. 31, ll. 38-67).

Re claim 19, Bunte discloses the system as recited in rejected claim 14 stated above, wherein the means for evaluation includes means for evaluating a portion of the first set of image

data and a portion of a second set of image data that is complementary to the portion of the first set of image data (col. 2, ll. 8-18 and the attempt to accomplish a complete reading of an optical code is shown in block diagram of Fig. 23; col. 31, ll. 59-67).

Re claim 20, Bunte discloses the system as recited in rejected claim 14 stated above, wherein the first imaging setting includes a first focal point setting, and the second imaging setting includes a second focal point setting, wherein the first and second focal point settings are different (col. 24, ll. 9-14).

Re claim 21, Bunte discloses the system as recited in rejected claim 14 stated above, wherein the means for selecting includes:

means for comparing evaluation results corresponding to the first and second sets of image data; and

means for selecting at least one of the first and second sets of image data in accordance with the comparison (Abstract).

Re claim 22, Bunte discloses the system as recited in rejected claim 14 stated above, wherein the means for evaluating and means for selecting collectively comprises at least one processor for performing steps of:

evaluating only one set of image data and determining if results of the evaluation satisfy a predetermined condition;

selecting the evaluated set of image data if the results of the evaluation satisfy the predetermined condition;

evaluating the other set of image data if the results of the evaluation do not satisfy the predetermined condition and comparing the evaluation results corresponding to the first and second sets of image data; and

selecting at least one of the first and second sets of image data in accordance with the comparison (col. 31, ll. 39-67).

Re claim 24, Bunte discloses the system as recited in rejected claim 14 stated above, wherein the evaluating includes:

means for locating image data in at least one of the respective first and second sets of image data that corresponds to at least a portion of the optical code; and

means for evaluating the respective located data (col. 31, ll. 39-67).

Re claim 25, Bunte discloses the system as recited in rejected claim 14 stated above, wherein a location of an optical code (label 30) in the image data in one of the first and second sets of image data is used to locate image data that corresponds to at least a portion of the optical code in the other set of image data (Block 2305 in Fig. 23 includes a step of selecting the ordered list of compatible sensor, illuminator and decode combinations generated previously based on preference calculations).

Re claim 26, Bunte discloses the system as recited in rejected claim 14 stated above, further comprising the step of receiving at least one of the first and second sets of image data while the means for evaluating evaluates (co. 31, ll. 53-56).

Re claim 27, Bunte discloses an optical code reading system (optical code reader) comprising;

an imaging engine having a lens assembly (lens system 1857 and autofocus circuit 1859) and a photo sensor array (detector 1861) for consecutively imaging an optical code located in a field of view of the imaging engine respectively using at least a first and a second imaging setting (first and second type of illuminators), and generating at least first and second sets of image data respectively corresponding to the first and second imaging settings;

processing means (microprocessor 1873) for evaluating at least one of the first and second sets of image data, and selecting at least one of the first and second sets of image data in accordance with the evaluation (col. 31, ll. 59-67); and

processing means for decoding image data (decode processing circuitry) from the selected set of image data that corresponds to the optical code (Fig. 18A-18C).

Re claim 28, Bunte discloses the system as recited in rejected claim 27 stated above, wherein the processing means further configures (the microprocessor operates as a CPU for the code reader) the second imaging setting in accordance with evaluation of the first set of image data.

Re claim 29, Bunte discloses the system as recited in rejected claim 28 stated above, wherein the imaging engine further includes at least one of an illuminator assembly (1813), a shutter assembly, signal processing circuitry (2467), an illuminator control assembly (Control and drive circuit within 2413) for controlling the illuminator assembly, an exposure control assembly for controlling the shutter assembly, signal processing control circuitry for controlling the signal processing circuitry, and a focus control assembly (Autofocus circuit) for controlling the lens assembly; and

wherein the processing means generates control signals in accordance with the second image setting for controlling at least one of the illuminator control assembly, the exposure control assembly, the signal processing control circuitry, and the focus control assembly (Block diagram in Fig. 23).

Re claim 30, Bunte discloses the system as recited in rejected claim 27 stated above, wherein the processing means evaluates a portion of the first set of image data and a portion of a second set of image data that is complementary to the portion of the first set of image data (col. 2, ll. 8-18 and the attempt to accomplish a complete reading of an optical code is shown in block diagram of Fig. 23; col. 31, ll. 59-67).

Re claim 31, Bunte discloses an optical code reading system (optical code reader) comprising:

an optical reader comprising:

a lens assembly (lens system 1857 and autofocus circuit 1859) for focusing incident light;

a photo sensor array (detector 1861) for sensing the focused incident light and generating image data corresponding to two different image settings (first type and second type);

transmission means (communication interface 1877) for transmitting the image data; and

a processor externally located from said optical reader for receiving the image data corresponding to the two different imaging settings and processing the image data, including evaluating image data corresponding to at least one of the two image settings; selecting image data corresponding to one of the two different image settings in accordance with the evaluation and decoding image data from the selected image data that corresponds to the optical code (col. 2, ll. 8-53).

processing means (host processor not shown in the Fig. 2) for evaluating at least one of the first and second sets of image data (col. 9, ll. 21-25).

Re claim 32, Bunte discloses a method for imaging an optical code comprising:

consecutively imaging an optical code respectively using at least a first (first type of illuminator) and a second imaging (second type of illuminator) setting;

generating at least first and second sets of image data respectively corresponding to the first and second imaging settings (by an array of photosensors);

transmitting (via communication interface) the first and second sets of image data to an external processor (host processor) for processing of the image data, wherein the external processor processes the first and second sets of image data in accordance with a processing method comprising the steps of:

evaluating at least one of the first and second sets of image data (by a signal processor 19);

selecting at least one of the first and second sets of image data in accordance with the evaluation (Abstract); and

decoding image data (decode processing circuitry) from the selected set of image data that corresponds to the optical code (Fig. 18A-18C).

Re claim 33, Bunte discloses a computer readable medium (core program storage 1871) storing programmable instructions capable of being executed by a processor (col. 26, ll. 20-24) for performing the steps of:

receiving at least first and second sets of image data corresponding to consecutive imaging of an optical code using respective at least first and second image settings;

evaluating at least one of the first and second sets of image data;

selecting at least one of the first and second sets of image data in accordance with the evaluation (Abstract); and

decoding image data (decode processing circuitry) from the selected set of image data that corresponds to the optical code (Fig. 18A-18C).

Re claim 34, Bunte discloses a computer data signal embodied in a transmission medium for execution by at least one processor for processing an imaged optical code, the data signal comprising:

a code segment including instructions for receiving at least first and second sets of image data corresponding to consecutive imaging of an optical code using respective at least first and second image settings;

a code segment including instructions for evaluating at least one of the first and second sets of image data;

a code segment including instructions for selecting at least one-of-the first and second sets of image data in accordance with the evaluation; and

a code segment including instruction for decoding image data (decode processing circuitry) from the selected set of image data that corresponds to the optical code (Fig. 18A-18C; FIG. 23 is a flow diagram illustrating the functionality of a microprocessor of a code reader upon encountering a read attempt. In particular, after ending the initialization process described in reference to FIG. 22, a microprocessor begins the read processing of FIG. 23 upon detecting a read attempt. At a block 2301, the microprocessor identifies the ordered list of compatible sensor, illuminator and decode combinations generated previously based on preference

calculations. At a block 2305, the first combination is selected, and with that selection a read is attempted at a block 2307. The specifics regarding the read attempt are governed by the read control code and the decode program code extracted from the most recent core program storage means, as previously described.

If the read attempt succeeds, the microprocessor processes the code information at a block 2319, ending the process and awaits another read attempt. Otherwise, if the read attempt fails, the microprocessor branches from a block 2309 to a block 2311 to attempt the read with another sensor, illuminator and decode combination.

If another compatible combination exists that has not yet been attempted, the microprocessor branches and selects the next combination at the block 2305. As before, the selection is based on preference ordering. With the next combination, the read is reattempted at the block 2307. With success, the code information is processed and the reading process ends. Otherwise, if the read attempt fails, the cycle is repeated until either all compatible combinations have failed or a successful read has occurred.

If all combinations have failed, the microprocessor considers whether to reattempt the entire process another time at a block 2313. If warranted, the microprocessor branches back to the block 2301 to begin again. If the entire reattempt is not warranted, the microprocessor branches to a block 2315 to indicate a fail condition, ending the read attempt).

Response to Arguments

4. Applicant's arguments filed January 3, 2005 have been fully considered but they are not persuasive.

The amended independent claims are merely combination of features from a cancelled claim that were previously rejected.

Therefore, claims 1-9, 11-22, and 24-34 remain rejected.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven S. Paik whose telephone number is 571-272-2404. The examiner can normally be reached on Mon - Fri (5:30am-2:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Lee can be reached on 571-272-2398. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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ssp